

## An Evaluation on Medical Students' Satisfaction with Clinical Education and its Effective Factors

Vahid Ziaee\*, Zahra Ahmadinejad†, Ali Reza Morravedji‡

\*Department of Pediatrics Diseases

†Department of Infectious Diseases

‡General Physician

Tehran University of Medical Sciences

**Abstract: Purpose:** To evaluate medical students' satisfaction with clinical education during medical internship and the effects of variables in the organizational domain on satisfaction.

**Method:** A cross-sectional descriptive analytic study in 2000 identified students' satisfaction with clinical education in medical students of Tehran University of Medical Sciences. Students' satisfaction was assessed by a modified job satisfaction questionnaire. Clinical education was classified into; outpatient, bedside and theoretical teaching.

**Results:** Overall satisfaction with clinical education was 38.8%; outpatient and bedside teaching 52% each and theoretical education 70.8%. Overall satisfaction had a significant association with approach to common and epidemic diseases, class size, and the course planning.

**Conclusion:** Based on the present study, we conclude that clinical education should be reevaluated in our university with the specific attention to the class size, variety of diseases and course planning considered for each session in clinical education.

**Key words:** student satisfaction, clinical education, bedside teaching, outpatient training, theoretical education

Although job satisfaction has been amply studied, literature on satisfaction with clinical education is quite limited. Some theories such as career theory have been used to explain how occupational and psychological variables can influence attitudes toward careers. Since the students' satisfaction has been associated with their later professional attitudes, career commitment and retention, professional education faculties should be concerned with students' satisfaction as an outcome of the educational process.<sup>1</sup> Elements of job satisfaction can be categorized into three domains: i.e. personal, interpersonal, and organizational.<sup>2</sup> Personal domain is considered as an individual's character and it is defined as specific characteristics that are related to the students (e.g. life satisfaction, self-esteem). Relationship between the student and the clinical instructor is categorized into interpersonal domain. The characteristics of clinical education that might influence satisfaction are categorized as an organizational domain, which are included number of teachers, patients, educational methods, and the practical skills that the students learn. There are few studies that evaluate the effect of different factors in these three domains clearly, but some of these factors were evaluated unclassifiable in several different studies. It has been shown that autonomy,<sup>3-6</sup> variety,<sup>7</sup> the availability of learning opportunities<sup>8</sup>, being supervised by more than one supervision and

use of institutionalized methods of orientation increased satisfaction.

Models that predict job satisfaction are not appropriate to evaluate student satisfaction. Clinical experiences for medical students are not the same as jobs, and the role of a student in clinic is not the same as that of an employee. Unlike typical employees, students are located at facilities temporarily. Students typically are not paid and, therefore, do not have the same rights and privileges, or work expectations as employees. Student often complete their experiences at clinical sites, which are not the places they usually choose for regular employment. Although the above-mentioned are between student's experiences and employment, we can design a model for predicting satisfaction with clinical experiences from combining some of the variables that predict job or career satisfaction.

Although medical students and other students in the health care professions appear to be satisfied with their clinical practices and learning, the elements that contribute to this satisfaction aren't well known.<sup>9,10</sup> On the other hand, changes in health care system in Iran from 1994 have had an enormous impact on the medical education, students, instructors and health care workers satisfaction.

For some years, evaluation of medical teaching has been demanded in our university. Thus, we designed a questionnaire study at Tehran University of Medical Sciences to assess the medical student's satisfaction with clinical education during their medical internship. We studied the separate effects of variables in the organizational domain, as well.

**Methods**

This was a cross sectional descriptive analytic study, which was conducted in 2000, at Tehran University of Medical sciences. Subjects were medical students during their medical internship (the last two years of sixth and seventh year medical students). Assuming the previous available study that students' satisfaction with clinical education was 40%, the calculated sample size was 250. After explaining the study design and objectives, we obtained students' verbal consent. This study was approved by the faculty of medicine (Tehran University of Medical Sciences).

We used a questionnaire based on job satisfaction (Appendix 1). The clinical education was classified into three categories including: outpatient, bedside

and theoretical teaching. In addition, the students' satisfaction of the way that they were tested for clinical skills was also assessed. The students' satisfaction with clinical education was classified into; completely, partial and none. Students who were satisfied completely or partially with clinical education were considered satisfied and those who didn't express satisfaction with their education were defined as unsatisfied ones. Furthermore, the elements of satisfaction were ranked according to scores given by students in this study (the most important factor scored 1, while the least important factor scored 7 for outpatient training and bedside teaching variables and score 5 for theoretical education variables).

The students recorded their age, the living state (dormitory or no dormitory), their gender and marital status. We felt the questionnaire has face validity based on the use of similar questions in previous studies, and the elements that we considered as affective factors on clinical education in three different domains, were those which were considered as the most important elements in clinical education by an expert committee in the Tehran University of Medical Sciences.

**Table 1**  
**The Elements that Contribute to Satisfaction with Outpatient and Bedside Teaching**

Domains	Outpatient training			Bedside teaching		
	Satisfied students	Unsatisfied students	P.value	Satisfied students	Unsatisfied students	P.value
	Total No=130 No* (%)	Total No=120 No (%)		Total No=130 No (%)	Total No=120 No (%)	
Affecting factors						
Approach to common and epidemic diseases	53 (40.8)	10 (8.3)	0.01	35 (26.9)	8 (6.7)	0.01
Instructors experiences	18 (13.8)	20(16.7)	0.46	25(19.2)	23 (19.2)	0.29
Appropriateness of educational atmosphere	17 (13.1)	7 (5.8)	0.62	22(16.9)	6 (5)	0.027
Approach to rare diseases diagnosis of which requires specialty	16 (12.3)	4 (3.3)	0.01	16(12.3)	7 (5.8)	0.01
Course planning	12 (9.2)	51(42.5)	0.01	9 (6.9)	50(41.7)	0.01
Class size	10 (7.7)	16(13.3)	0.01	10(7.7)	17(14.2)	0.01
Duration of training	3 (2.3)	12 (10)	0.26	13(10)	8 (6.7)	0.003

The statistical package for the social sciences (SPSS version 9) was used for statistical analysis. The relation between satisfaction of outpatient training, bedside teaching, theoretical education and variables was analyzed by chi square. Mantel Haenzel Chi square was computed whenever indicated. P values equal to or less than 5% were considered significant.

**Results**

Two hundred and fifty medical students were surveyed in this study. The mean age of the students was 26.5 years (23-38 years) and 216 (86.4%) of them were male. Eighty-three students (33.2%) lived in

Table 1. A significant association was found between satisfaction with bedside teaching and teaching of rare diseases diagnosis of which requires specialty, course planning, approach to common and epidemic diseases, class size in bedside (P=0.01), and appropriateness of educational atmosphere (P=0.027). Students' satisfaction with appropriateness of educational atmosphere was not significant according Pearson test (P=0.08). Duration of bedside teaching had a significant effect when tested by Mantel Haenzel chi<sup>2</sup> (P=0.003).

**Satisfaction with theoretical education** - One hundred and seventy seven subjects were satisfied with theoretical teaching (70.8%). The elements that

**Table 2**  
**The Elements that Contribute to Satisfaction with Theoretical Education**

Assessment Affecting factors	Satisfied students	Unsatisfied students	P.value
	Total No* =177 No (%)	Total No =73 N0 (%)	
Approach to common and epidemic diseases	71(40.1)	4 (5.5)	0.01
Instructors experiences	27(15.3)	35(47.9)	0.01
Educational equipment	18 (10.2)	11(15.1)	0.07
Approach to rare diseases diagnosis of which requires specialty	49 (27.7)	6 (8.2)	0.01
Class size	12 (6.8)	17(23.3)	0.01

dormitories and 85 students (34%) were married. Overall satisfaction was 38.8% (97/250) and 61.2% (153/250) were not satisfied with their education. There was no statistically significant relationship between age, gender, living in dormitory or marriage and the level of satisfaction.

**Satisfaction with outpatient training** - Fifty two percent (130/250) were satisfied with outpatient training. The most important factors (score 1) that contribute satisfaction with outpatient training in our subjects are shown in Table 1. There was a significant association with satisfaction and outpatient training and class size; approach to rare diseases diagnosis of which requires specialty; course planning and approach to common and epidemic diseases (P=0.01).

**Satisfaction with bedside teaching** - One hundred and thirty students (52%) were satisfied with bedside teaching. The factors chosen by students affecting satisfaction with bedside teaching are mentioned in

are correlated with satisfaction with theoretical education are shown in Table 2. We found a significant association between satisfaction with theoretical education and the quality of education, class size, approach to rare diseases diagnosis of which requires specialty, and common and epidemic diseases (P=0.01). The mean score given to the different effective factors on the students' satisfaction with outpatient training and bedside teaching in satisfied and unsatisfied students is shown in Table 3.

**Students' satisfaction with the way through which they were tested** - Sixty four percent (161 subjects) and 48.8% (122 students) were satisfied with the way they were tested from theoretical education and practical training points of view, respectively. There was a positive association between overall satisfaction and satisfaction with the methods through which their abilities after theoretical education and practical training were assessed (P=0.01).

**Table 3**

**Mean Score Given to the Different Effective Factors among Satisfied and Unsatisfied Students**

Affecting factors	Outpatient training score(Mean±SD)			Bedside teaching score(Mean±SD)		
	Satisfied	Unsatisfied	P.value	Satisfied	Unsatisfied	P.value
Approach to common epidemic diseases	4±1.8	4.1±1.6	0.62	4±1.9	4.6±1.7	0.026
Instructors experiences	4.2±1.4	3.9±1.7	0.21	3.5±1.6	4.2±1.7	0.003
Appropriateness of educational atmosphere	3.8±1.9	5.3±1.6	0.0001	3.9±1.8	5.2±1.7	0.0001
Approach to rare diseases diagnosis of which requires specialty	4.9±2.1	2.8±2.1	0.0001	5.4±1.9	2.9±2.2	0.0001
Course planning	3.5±1.7	3.7±2	0.47	3.1±1.7	3.3±1.9	0.56
Class size	2.7±2	4.8±1.8	0.0001	3.1±1.9	4.5±1.8	0.0001
Duration of training	4.8±1.9	3.2±1.7	0.0001	4.6±1.8	3.3±1.7	0.0001

**Discussion**

The aim of our study was the evaluation of medical students' satisfaction in clinical education and influence of organizational domain variables on this satisfaction. Clinical education is an important course in medical education and students spend about half of their educational time both in clinics and hospitals. Those clinical experiences that satisfy medical students are consistent with the literature in the health care professions.<sup>7,9</sup> Trainees' satisfaction is an index for evaluating medical education, but there are few researches measuring this factor.<sup>11</sup> For this reason, the factors that influence satisfaction in medical students are not well understood. In a survey of physical therapist students performed by Stith et al, they found a low relationship between satisfaction with clinical education and organizational structure. After changes in health care system in Iran during 1994, organizational structure in educational hospitals has not been well defined. These changes have had an enormous impact on the medical education. Medical schools are under the pressure to adapt to changes in the health care system as well as maintaining excellence in education.<sup>12</sup> This could have lead to the low overall satisfaction with clinical education found in our study, though this needs more study.

In this study, we did not find a relationship between satisfaction and gender which consistent with other studies.<sup>13,14</sup> However, a few studies have shown that female students are more satisfied than male students in terms of their clinical education .

In our study, the approach to common and epidemic diseases and rare diseases diagnosis of which

requires specialty in outpatient and bedside teaching were significant predictors of satisfaction in medical students. Although, this finding is similar to Seabrook et al<sup>15</sup> study on performance and satisfaction with day surgery center teaching, the number of new inpatients and outpatients in Xu's surveys was not related to students' overall satisfaction. When we analyzed data using the mean score given to the effective factors in outpatient teaching, there was not a significant association between approach to common and epidemic diseases with students' satisfaction.

According to findings of Xu et al, frequent contact of residents with students, providing valuable teaching experiences by residents, serving as role models by attending faculty and residents, showing respect for students by attending faculty and residents, and ratings of teaching rounds and conferences were significant predictors of satisfaction among students. In our survey, experienced instructors had a significant association with students' satisfaction in theoretical education but did not have a significant association with students' satisfaction in outpatient and bedside teaching. However, these factors had a significant association with students' satisfaction in bedside teaching with considering the mean score given to the effective factors as well. Davis et al study<sup>16</sup> that showed facilitator's content expertise alone dose not determine the amount of students' learning and student's satisfaction as it has been shown in Xu's study.

Duration of outpatient and bedside teaching didn't have any significant association with student's satisfaction. It seems that students' participation and practice is more important than time of teaching.<sup>17</sup> Course planning and curriculum structure had a significant

association with students' satisfaction. Prosser and Trigwell believe that learning depends not only upon how teachers have planned their courses and subjects, but also upon how their students understand this planning.<sup>18</sup>

Students' satisfaction has a role as an outcome of educational process because student satisfaction has been associated with later professional attitudes, career commitment, and retention.<sup>9,19</sup> Furthermore the outcome of the students' satisfaction has both immediate and long-term consequences. For example, if medical students are not satisfied with pediatric or infectious courses, the students will be less interested in these areas and less likely to choose them as their specialty in future.

### Limitations of the study

The questionnaire for assessing students' satisfaction was not tested for reliability. The satisfactory response was divided into two parts (complete or partial). It may be biased towards satisfactory appraisals. We did not consider a neutral response.

### Conclusion

The findings of this study suggest clinical education should be reevaluated in our university with specific attention to class size, variety of diseases and course planning for each session in outpatient and bedside teaching. Also experiences of instructors should be strengthened in theoretical education.

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### **Correspondence**

Vahid Ziaee  
Tehran University of Medical Sciences,  
No.43, Ghods St., Enghlab St  
Tehran, I.R.Iran  
P.O Box: 141555-6559  
Tel: (+98) 21-8955541  
Fax: + 98 21-8962554  
Email: Ziaee@tums.ac.ir

### Appendix: students' satisfaction questionnaire:

The first part of the questionnaire was about Demographic information of the students such as age, sex, marital status and the living status. The second part was about students' satisfaction that is mentioned below:

1- How satisfied were you with quality of medical education during your externship?

Completely satisfied       partially satisfied       Unsatisfied

2- How satisfied were you with outpatient training:

Completely satisfied       Partially satisfied       Unsatisfied

2-1) If you satisfied completely or partially, please rank the effects of the following factors on your satisfaction from one to 7:

Appropriateness of educational atmosphere (physical environment)

Appropriateness of duration of training

Approach to common and epidemic diseases

Approach to rare diseases diagnosis of which requires specialty

Good instructors' experiences

Class size (the number of students in each clinic)

Having a course planning (including objectives, educational tasks, definite reference)

2-2) unsatisfied students ranked the effects of the factors mentioned above from one to seven.

3- How satisfied were you with bedside teaching?

Completely satisfied       Partially satisfied       Unsatisfied

3-1) complete or partial satisfied student's ranked the effects of the factors mentioned in question 2-1 from one to seven.

3-2) Unsatisfied students from bedside teaching ranked the effects of the factors mentioned above from one to seven.

4- How satisfied were you with theoretical education (conference, morning report, etc)?

Completely satisfied  partially satisfied  Unsatisfied

4-1) If you satisfied completely or partially, please rank the effects of the following factors on your satisfaction from one to 5:

Good instructors' experiences

Approach to common and epidemic diseases

Approach to rare diseases diagnosis of which requires specialty

Usage of educational equipment

Class size (the number of students in each class)

4-2) Unsatisfied students ranked the effects of the factors mentioned above from one to 5.

5- How satisfied were you with the methods of the theoretical evaluation during your externship?

Completely satisfied  partially satisfied  Unsatisfied

6- How satisfied were you with the methods of the practical evaluation during your externship?

Completely satisfied  partially satisfied  Unsatisfied